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O'er Eden
Refresh the growth
Of Light and Love
That blossoms there
And bring you Peace.

—Byrd Carter.

JANUARY
1941

ROSE DISEASES IN SOUTHERN CALIFORNIA
Silas B. Osborn

CALOCHORTUS
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AUDUBON WARBLER
Frank Forrest Gander

BOOK REVIEWS
Lester Rountree

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Rob't. R. McLean

GLEANINGS
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Rose Diseases in Southern California

By SILAS B. OSBORN

For some time the writer has felt there was a definite need for an adequate review of the known facts on rose diseases, related troubles and their control in Southern California. There is practically no available literature on this subject. Here then is attempted something more comprehensive than is now available without any claims to the thoroughness with which each particular subject is covered. Considerable investigation is needed to augment information now at hand. The writer has drawn generously from the references cited, especially in describing the parasitic diseases. Above all the author is indebted to Professor L. M. Massey of Cornell University, Ithaca, New York, President of the American Rose Society for his suggestions, corrections and original information; even to the extent of the complete revision of several of the sections on parasitic disease. Dr. Massey spent his sabbatical year in California in 1933 and again visited California for a period of six months in 1940. As a result of these two visits the writer was enabled to obtain much valuable information and guidance. Dr. Massey is without question the foremost authority in the United States on rose diseases by reason of his long experience working with them.

DISEASES AFFECTING THE LEAVES PRIMARILY

Powdery Mildew (Sphaerotheca pannosa Wallr. Lev.)

White powdery coating develops on the leaves, young shoots and flower buds. Almost all varieties are susceptible. Mme. Cecille Bruner, Mermaid and a few others are practically immune. The ramblers such as Crimson Rambler, Dorothy Perkins, etc., are so subject to serious attack that their use is not recommended in San Diego county except in the dry interior areas. Heavy application of nitrogenous fertilizers will greatly increase likelihood of infection. Planting roses in shady locations or where air drainage is poor increases susceptibility of plants to serious infection.

Control: Commencing with the unfolding of the new leaves in the spring, regular weekly dustings or sprayings should be made. Sulphur dust of a finely divided type (at least a 325 mesh dusting sulphur) should be applied with an efficient duster. Good hand dusters can be obtained for from $1.00 up. The duster should have a spout at least 18 inches long (longer is desirable) turned up at the end to force the dust upwards through the plant, insuring good coverage with the sulphur particles on the undersides of the leaves. Better coverage will be obtained if the foliage is dusted when dry and when the air is quiet. Mid-morning is usually ideal for at that time the dew on the leaves has usually dried and our morning breeze normally does not commence until about 11:00 A.M. By working the duster constantly while walking slowly up and down the plant rows, a small cloud of sulphur will be created which, rising up through the plants, will completely envelop them. If the atmosphere is sufficiently still, enough sulphur will settle back on the upper surface of the leaves to cover them thoroughly and evenly. The leaves will be blotched with sulphur if they are wet when dusted and will appear unsightly. With a little practice, the plants can be thoroughly covered and yet show only a light film or bloom of fine sulphur particles. A high grade, finely divided sulphur, while somewhat more expensive in initial cost, will cover nearly twice the leaf surface that a cheaper, coarser sulphur will; therefore, the net cost will be less and the results more satisfactory. Wettable sulphur, 4 lbs. to 100 gallons of water may be used as a spray in lieu of the dust. Potassium sulfide, 1 oz. to 3 gallons of water is sometimes used with fair results but is probably not as effective as either the dust or the wettable sulphur spray, and is more liable to injure the plants. The potassium sulfide spray does not leave any appreciable residue on the leaves. It will, however, discolor paint and should, therefore not be used where it might drift onto and disfigure any painted surface.

Orange Rust (Phragmidium spp.)

Orange rust is not as prevalent as powdery mildew but is much more difficult to control effectively. Orange brown spore masses appear on the undersides of the leaves, usually first on the older and lower leaves but gradually on the upper leaves as the disease progresses. Tiny pin point yellow spots on the upper surface of the leaves indicate its presence. Late in the season the spore masses on the undersides of the leaves turn black due to the formation of winter spores. The various species of Phragmidium rusts are said to be specific to certain species of roses. One particular species of rust, therefore, will not necessarily infect the entire rose garden. However, where certain plants persistently become infected year after year despite remedial and preventive measures it may be prudent to remove and destroy such plants, particularly since prevention is the most effective control known and sporadic serious epidemics seem to be correlated with certain weather conditions. Aside from the unsightly appearance of infected plants, serious premature defoliation follows a severe infection. Some of the varieties known to be particularly susceptible to infection are Black Prince, Lord Charlemont, Hadley, John Russell, most of the older hybrid perpetuals, the moss roses, the old fashioned cabbage the Pernetianas, (Rosa foetida hythe Pernetianas, (Rosa Foetida hybrids, usually orange copper yellow or flame shades) are quite resistant as are the Teas, China or Bengal roses, and the tender climbers, Noisettes, Banksias, etc. Most of the red hybrid teas and hybrid perpetuals are strikingly susceptible.

Control: Remedial measures being mostly preventive should be commenced at pruning time when the plants are dormant. This is usually from the middle to the end of January. Every bush rose in the garden should be denuded of foliage. Susceptible climbers should also be defoliated. The prunings and leaves should be gathered and

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Again, the Calochortus . . .

By ETHEL BAILEY HIGGINS

The genus Calochortus is particularly a western one, being found from British Columbia south to Mexico, with only one species occurring as far east as Nebraska. The name Calochortus—beautiful grass — was given by Frederick Pursh, the botanist into whose care went the collections of the Lewis and Clark expedition.

Of the forty or fifty species, California can boast of twenty, which in their native habitat range from mountain to desert and to the sea, and accordingly vary much in their soil likes and in their hardiness.

The Calochorti have been known to horticulture for many years, as they figure among the floral treasures garnered by the English collector and botanist, David Douglas in 1830, and have been known and treasured in England since that time. The Botanical Magazine has figured eight of these wonderful lilies from California, some grown continuously since their collection by Douglas.

There are three groups of our Calochorti: the Mariposa, the Globe Tulip, and the Star Tulip.

There is great variety in the coloring of the Mariposas. They are found sometimes with a solid color, but more often with the blotches or bands of color on the petals, whose resemblance to the pattern of a butterfly's wing gave to this group its name. The petals usually have at the base a gland, which sometimes takes the form of a little pocket or depression, and which is very noticeable, especially as it is usually the center of a blotch of color. The variation in size and shape of these glands and the structure of the hairy growth which surrounds them become factors in the identification of the mariposas.

It would indeed be difficult to pick one species and say, 'This is the most beautiful;' the Lilac mariposa (C. splendens) of our San Diego hills is of a uniform lavender or lilac tone; the Golden-bowl mariposa (C. concolor) of the San Diego and San Bernardino Mountains is a deep golden yellow, often with a purple band; while a common one on the ocean bluffs in San Diego County is Weed's mariposa (C. Weedii), yellow with brown spots and prominent glands, often with petals bordered in brown. A little further north is found C. Plummerae, very similar in habit and form to this, but a lovely, smokey pink in color. It does not open as widely as does our yellow one, remaining more cup-shaped. These two are late in blooming. C. catalinae is a common one about Los Angeles, a delicate lavender with crimson markings.

The so-called White mariposa, (C. venustus of Douglas) is found from our own mountains north. It may perhaps be called the queen; in any event it is most royal in the liberties it takes in variation of coloring. It varies from white to lavender or pink, and with extremely variable markings. There is in the collection of Valentien water color paintings, which through the generosity of Miss Scripps is now in the possession of the San Diego Natural History Museum, a series of pictures of this lovely flower, almost breath-taking in their beauty, and showing the exquisite variations in coloration. A number of years ago Carl Purdy, the commercializer of our many beautiful native bulbs, described these as growing in abundance. He estimated that in a radius of a quarter of a mile there were 50,000 plants in bloom. What a sight that must have been!

There is a stout-growing one in the north, in color a purple lilac showing a greenish band (C. macrocarpus). One of the large flowered ones is C. clavatus, yellow with a reddish brown or lilac band.

A mountain dweller is the Sego lily (C. Nuttallii), the state flower

of Utah. This is well entitled to be selected as Utah's state flower, for when the little band which was the advance guard of the Morman trek to Utah was found after a winter of hardship, gaunt indeed but living, their salvation was due to the abundance of the edible corms of this lily. This fact is noted in "The Children of God", that vivid story of the Morman people.* C. Nuttallii is white, shaded with purple or lavender and with a darker purple spot near the gland. C. Leichtlinii of the Sierra Nevadas is of a similar coloring, with the dark spot almost black in its intensity. This is sometimes considered to be a variety only.

The desert also claims some of the mariposas. There is one which is found in Death Valley, and another is that brilliant flame-colored mariposa of the Mohave desert (C. Kennedyi).

Of the mariposas it is easy to say, 'This is lavender with a crimson blotch', or 'That is yellow with a green band'—but words can give no adequate idea of the infinite variation in color and marking. They must be seen to be appreciated.

The Globe tulips are quite different: instead of the open cup shape of the mariposa, they are globular in form and pendulous. There are only the three which have already (in a previous article) been noted: the white "fairy lantern" with its airy, delicate beauty, its pink variety, and the yellow "golden lantern."

The Star tulips are quite different from either of these groups, not only in appearance but in their habitat as well, the northern pine woods and wet valleys. Open and starry in shape with variations of color, white, blue, lilac, pinkish, they were at one time considered to be of one species and were included under the name of C. elegans. A common name applied to members of this group is "cat's ears." Some of them seem to justify

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*The **Children of God.** Vardis Fisher 1939.

Bird Parade—Audubon Warbler . . .

By FRANK FORREST GANDER

On chilly mornings of fall and winter, little gray birds come from my garden and work their way around my house searching carefully over the window screens and under the eaves for flies too chilled to attempt escape. As one of these little feathered visitors clings for a moment to a screen, I note that the gray of its plumage is relieved by black and white in the wings and tail and by five yellow patches, one on top of the head, one on the throat, one on the back at the base of the tail, and one on either side under the wings.

From these markings, I readily identify the birds as Audubon Warblers, charming creatures named in honor of that famous artist-naturalist, John James Audubon. Each fall, they return to my garden from their nesting grounds farther north, arriving about mid-September and remaining until the Ides of March are past. Throughout this time, scarcely an hour of daylight passes without the familiar **tchip** of an Audubon sounding somewhere about the house and garden.

But stay with me as long as they will, they are always welcome, for of all the avian host, none more assiduously gleans insect pests from my plants. Flies, plant lice, caterpillars, and a host of other enemies of the garden all go to give Audubon Warblers the restless energy which carries them from the ground to the tops of tall trees and back again in a continuous search for insects to supply more energy for hunting for still more insects.

When spring comes, and the time for the departure of our winter birds draws near, the males become quite resplendent in their nuptial plumage. The five yellow spots become larger and brighter; rows of black dots appear along the sides of the breast, and the blue-gray of their plumage is accentuated. Rarely, we may, at this season, hear a bit of song from them—nothing very noteworthy, scarcely to be called a warble, but cheerful and sprightly enough. So pretty have they become, and so delightful is the little song, that I experience a feeling of real loss when in late spring, I realize that I have not seen Audubons for several days. I know that except for a chance straggler or two, they will not be in my garden again until in September, and I shall miss them.

Natural History Museum.
Balboa Park.

WINTER BLOOM IN THE POOL

One of the favorites of our water gardens is the Water Hawthorn or Aponogeton. The one we commonly know is the white one, very glistening, which has white fragrant blooms floating on the water intermixed with the long green leaves. The blossoms consist of one stem with two spikes at opposite sides, the pure white bracts being all the more showy because of the numerous dark antlers clustered at base of each bract which consist of a double row along top of the stem.

The seed pod is correspondingly peculiar and as each vat-like seed ripens it disengages itself from the parent, floats and throws out roots —then leaves—until of its own weight it sinks and starts its new life in the muck at the bottom of the water. They like deep water, two to three feet, and are winter bloomers in our San Diego climate.

Now we have the Pink variety. It is not a pink bloom but the seed pods are and they are so beautiful we can forgive a pink bloom for being white. The seeds are much larger than the white, the leaves of a reddish bronze, and the whole plant of a very vigorous growth.

The Aponogeton family has 12 or more members, all inhabitants of Africa, Australia and Asia—and we are living in hopes that some day some venturesome traveler will bring us some more varieties.

COMPLICATIONS and COMMENT

Call this chitter, but not tattle—call it it gossip, call it prattle—
But whate'er may be its name, call it fun—
This garden game!

TREES

There is a fine magazine published in Santa Monica called "Trees" that carries on a vigorous campaign for street trees, and more street trees. Now our local newspaper carries the story that Oceanside is removing some of its palms from the main highway. Many people consider these fine old trees the one thing that sets that little city apart from all the rest of the cities on this southern coast.

Do you remember how beautiful Encinitas used to be when it had those rows of magnificent eucalyptus trees lining its main street? In hot weather we used to look forward to them for miles down the coast. Then, because the advertising signs of a few hamburger joints and pop stands were obscured, the finest trees on the whole coast highway were cut down. And look at Encinitas now—just a wide spot in the pavement. Can't the beauty-loving citizens of Oceanside do something about this?—A. G. L.

Silverfish

Silverfish will eat the bindings from the books in the bookcase and really do a lot of damage, as everyone knows.

They will chafe and scrape the bindings and covers of books fastened with glue or paste. Of course, bookcases with closed doors are more likely to be infested than those with open shelves.

A mixture of sodium fluoride and flour, half and half, or pyrethrum powder scattered frequently on and around the shelves will be found to be quite effective. Cryrolite dust is also sometimes used for this purpose. Where it is safe to use, a poison bait can be placed on the shelves with very good results. This bait is prepared by mixing together thoroughly a half pint of flour and a quarter ounce of white arsenic, adding sufficient water to make a thin paste. This paste can be spread around books and shelves on tins or cards.—R. R. M.

ROSES AT EASE

A new crop out of the north . . . bushes that will cramp themselves into tins to suffer living agony or glory in searching deep cool ground with swelling, swaggering roots. In either case they must come tainted with disease . . . can't help it. Or the spores of bad news will drift over the fence from the neighbors, which amounts to the same thing if one doesn't act. So it should be said now is the time to clean up . . . old or new . . . if roses this summer are to be all one may fairly expect.

Silas Osborn tells how to do it in this issue and some others to come . . . tells it straight and with authority. If he seems to claim little credit for a surpassing job, know that he is merely out ahead of the rest of us and sees the unanswered questions rather than those so lucidly presented here for our understanding.

If someone could explain in common parlance how disease organisms work in plants, the gardener would realize what he is doing when he sprays . . . and do it more effectively. If he could only know that a tiny microscopic hundredth part of a pin point . . . his guest through the air or already lodged under a bark scale, possibly in a lesion, itself too small to note . . . then he would start early as Mr. Osborne directs and stay 'til the end of time or at least until time to start again next year. And when he comes to realize that this worse than pinprick becomes the broad field of further infection, spots on the leaf, discolorations, yellowings, definitely filibustering the production of fine roses. He will know then the meaning of the period in between, that time of the fifth column when the cancerous threads of the invader are in sanctuary, laying the ground for the ultimate debacle. So it goes. They work in the dark, even as ourselves, and the cycle turns ever on and over until we . . . you . . . take an intelligent hand in the matter. R. S. H.

December Meeting

On the 17th of December, the Association held its annual Christmas party in the Floral Building. The meeting was conducted by Frederick Jackson in the absence of Mrs. Greer, our president. Prior to the distribution of appropriate potted plants from the tree which is with us as a time-honored custom, Mr. C. J. Jerabek displayed individually specimens of berried shrubs and other sprays suitable for Christmas decoration. Many of the latter he had painted in silver or set with artificial snow in the spirit of the season.

In a very interesting way he described the different species, their origin in many cases, their tendencies and needs; then passed them through the audience for a closer examination. It is of note that the birds have taken all the edible berries from the shrubs in Balboa Park, but strangely, have left plenty in the plantings of Presidio Park whence the best specimens came.

He described four species of Pyracantha, stating that the variety gibbsi makes an excellent ground cover; that while it will send up an occasional taller stem, it will grow low over a bank or may be used to cover a lawn area. Altogether, he showed five species of this group and called attention to the fact that P. koidzumi (formosana) while one of the most handsome in berry display was immune to the ravages of birds, the berries evidently lacking in appeal to the avian appetite.

Other items of note were branches of a rare elm tree native to the Himalaya Mountains where it flourishes at an elevation of from three to thirteen thousand feet; the Carolina Cherry (Prunus caroliniana) especially suited to the climate here, its foliage always green, good for hillsides that are not too dry; Co-

toneaster parneyi which sends out berried branches to six feet in length. This latter he praised most highly, saying that it bids fairly to supplant the older and better known types for this purpose. Then there was the Yeddo-hawthorn (Raphiolepis umbellata var. ovata), which was favored mightily of Kate Sessions—"no mealybugs, no scaly bugs; plant lots of it." Let us do so.

Each branch was tagged with a number, to be claimed by the member or guest with the duplicate number given on entering the hall. The prize boquet was made up of berried sprigs of Celestial or Heavenly bamboo, grown commonly here; its native habitat China where it is highly considered for decorating hsrines and altars the coming of the new year.

The Floral Association is much indebted to Mr. Jerabek for his continued and helpful interest in its meetings and other undertakings. After the plant distribution, refreshments were served and Christmas greetings exchanged.—W. A. N.

Further recommendations of suitable plants to consider for indoor decoration at this time of the year by Mr. Jerabek.

Coniferous Trees and Shrubs

Pines, to include the species canariensis, coulteri, halepensis, pinea, muricata, pinaster, radiata, torreyana.

Cypress, funebris, the mourning cypress, guadalupensis, macrocarpa, arizonica and sempervirens var. stricta.

Junperus conferta and varieties of the Savin Juniper.

Of the true cedars, C. atlantica and its variety glauca and where possible to obtain, libanotica, the Cedar of Lebanon.

Miscellaneous Trees and Shrubs, Yew, Taxus baccata; Podocarpus elongata; Phillyrea latifolia var. media; Rhamnus crocea, the native Redberry; Ternstroemia; Calothamnus asper; Schinus terebinthifolia, the Brazilian Pepper; Osmanthus ilicifolius; Acacia verticillata; Laurus nobilis, the Classic Laurel; Prunus ilicifolia and lyoni, the two native evergreen plums.

Gleanings from the Magazines

By Ida Louise Bryant

The AMERICAN HOME for January speaks up for getting away from the hackneyed lawn-in-front-shrubs - against - the - base sort of planting that most of us with small houses take as a matter of course, and says, in effect, get out of the rut and let yourself go. It mentions ground covers other than grass, for one, which we are seeing more and more in California; the arguments for and against English Ivy have been known to break up friendships and alienate whole neighborhoods. It is a task to keep lawns looking good three hundred and sixty-five days of the year (sixty-six, this year) and while not many would care to make their revulsion against grass so apparent as to pave the front yard with concrete and paint it green, it has been done. Here, again, it seems to us, the city planners and powers-that-be are at fault; that a lot of only a hundred foot depth should have a set-back line 26 feet from the curb, as is the case in our suburb, seems unreasonable, to say the least. If what is wanted is the effect of spaciousness, the subdividers who lay out the tracts in the first place should provide broader streets, and allow the residents to do their gardening at the back of the house, where there is privacy and quiet. Is there a second for that motion?

Anyway, the AMERICAN HOME remarks: "Don't waste that good garden space out in front!"

The November issue of the GARDENERS' CHRONICLE devotes considerable space to "covering up for the winter," we need to think about all those preparations that we escape out here, to realize how lucky we are. An article on how to keep your house plants happy gives recipes for home-made nutrient solutions. We wonder if the beautiful cylindrical red berry illustrated on the cover page is the Red-berried Black Alder a friend newly returned from Connecticut raves about.

In CACTUS for November there is a story about a projected garden in Catalonia which was to be one of the wonder-gardens of the world, with every type of plant life represented. It was the dream of a Spanish gentleman, Carlos Faust, and a good start had been made when the war came. The planting has had to be interrupted, but the plan still holds. It speaks of the AGAVE AMERICANAS and the CHOLLAS prospering in the California garden and shows in the illustrations the type of landscape that is familiar to us.

GARDEN GOSSIP for November has an interesting article on clematis that makes us wonder why this free-flowering vine isn't more commonly grown; there are many new hybrids, in every range of color, and their growth is more restrained than that of the Cup of Gold, for example, or some of the bignonias that grow with such abandon.

SUBTROPICAL GARDENING for November betrays the fact that the billboard is one of that state's hardy pests, too; one might well substitute the name of our state in the following query: "Isn't it wonderful to be driving along here in Florida enjoying the wide-open spaces? between the billboards?" This little magazine is most stimulating, with much of interest for any California dirt gardener; its 24 pages are packed full of well-written matter.

GOLDEN GARDENS for November in "Recommended Try-outs for Our California Gardens" by Hugh Evans, lists two of our pets: Dychoriste thunbergiflora, and Clerodendron myricoides, both free-blooming shrubs with blue flowers. The latter, one of the neighbors described as a "fluffy sort of bush that could really be grown in front of a window without cutting out ALL the light. Those of our readers who are interested in dichondra, that wonder-child of ground covers, might find encouragement in "The

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Gleanings from the Magazines

(Continued From Page 5.)

Doughty Dichondra."

SUNSET lists as its December Flower-of-the-Month the new Violet Queen sweet asyssum, a border plant that grows low and so evenly that "one would guess that it had been sheared." Could any gardener ask for more?

November Meeting

At the November meeting of the San Diego Floral Association, Senator Ed Fletcher was the speaker of the evening. In his opening remarks he paid high tribute in a feeling of thankfulness and praise for the work of the beloved Kate O. Sessions, stating that it was she who urged the park committee to buy the first plants for the Balboa Park area in the Golden Hill district.

Colonel Fletcher then spoke of his and Mrs. Fletcher's 14,000 mile trip by airplane over the five republics which stretch between Mexico and Panama, Guatamala, Salvador, Honduras, Nicaragua and Costa Rica. He passed across the screen highly interesting motion pictures taken during this trip. His account of the people, their agriculture, the native fauna and flora of the regions was highlighted by comments on the beauty of things; the many unusual palms, the multicolor and form of flowers, the tropical aspect of the vegetation, all was most enlightening and interesting. Speaking of orchids, he stressed the fact that so little was known about them, that so comparatively few species had been classified botanically.

In Salvador they found orchids growing not only in swamps, but on palms and in pine trees, flowers of exquisite beauty that might be purchased three for a nickel. They ate avocados here taken from the identical trees that had supplied buds to propagate some of the first

(Continued on Page 9.)

Problems of the Soil . . . .

By R. R. McLEAN, County Agricultural Commissioner

Arbor Vitae Lice

Q. I have two arbor vitae plants in tubs on the porch. They have turned black in places and look badly. Can you tell me what is wrong and the remedy?—**E. S.**

A. The usual cause for a condition of this kind is attacks by the arbor vitae plant louse. This insect is very much the color of the bark on which it feeds by sucking out the plant juices and it is very difficult to locate unless you know exactly what you are looking for, as it is almost motionless. This aphis gives off a sweet sticky substance in feeding known as honey dew and in this the sooty mold fungus grows, giving the plants their characteristic black color.

If the plants are in such a situation that they can be sprayed with a strong stream of water directed into and through them, most of the insects can be washed off and out. Then follow this spray with a thorough application of tobacco, such as black leaf 40 or similar extract, combining it with soap and water, and your plants should be entirely rid of this insect.

Whitewash Formula

Question: Please advise me how to make a good whitewash for fruit trees and when and how it should be put on. Will the whitewash injure the young tender twigs? — S. W. L.

Answer: In order to protect trees, particularly deciduous fruits and nuts, from winter injury they should be covered with a good whitewash during the winter. Although only the trunks and larger branches need to be protected, it does no harm and in locations where early spring frosts occur it will be entirely beneficial to cover the entire tree with whitewash. The material can be applied as a spray, using a coarse nozzle, after pruning is completed. This of course saves time and material. In California where late winter days are often quite hot, deciduous fruit trees, unprotected by leaves and lacking the cooling influence of a free-flowing sap, often burn badly. The bark of trunks and larger limbs is killed where exposed to direct rays of the hot sun and later on borers enter such dead areas and complete the work of destruction. A good coat of whitewash on the trees will not only prevent this burning but will, if applied to the entire tree, keep the trees dormant for a longer period in the spring, enabling them to escape the effects of late spring frosts that sometimes occur after blossoming.

A simple formula for whitewash consists of quicklime 25 pounds, salt 2¼ pounds, sulphur 1⅛ pounds and water about 5 gallons. Slake the lime slowly so it will not burn. Add the salt and sulphur during the slaking process. To make this whitewash stick better, add a little glue water, prepared by dissolving stick glue in hot water. If you are where you can obtain cactus leaves or stems, chop them up and soak over night in water, then use the liquid in the wash instead of the glue water. If the wash is to be applied as a spray, be sure to strain it before putting it in the spray tank.

Cover for Parking

Q. Is there anything which will grow in a parking under an old pepper tree? I have been trying to get the purple lantana started for three years and it cannot survive. Please answer this in the California Garden. Thank you.—**B. M. S.**

A. You do not state whether the parking space under the tree is well shaded or if it is exposed to the full sun. For shade the first plant to be recommended is English ivy. Vinca major, sometimes known as "periwinkle"; wild strawberry (Fragaria chiloensis) and Ajuga reptans (bugle weed) are fairly satisfactory and easy to grow. For a sunny exposure the mesembryan-

themums, of which there are many varieties, will withstand the most neglect. Gazania aurantiacum is a splendid ground cover as is Aloe ciliaris. Both will thrive with but little care. The blue Morocco creeper, Convolvulus mauritanicus, is easily grown and a fine cover for bare ground.

However, you state that you have failed with purple lantana and this indicates you will have considerable difficulty in getting anything started in this location, as purple lantana is one of the easiest to grow under conditions that you describe. The decay of pepper leaves probably renders the soil quite acid and this may be part of your trouble. Some tannic acid is undoubtedly released during the decay process, also. Some lime scatterred around under the tree and well worked in may be of some help..

Tree Wounds

Q. In pruning a large tree I have had occasion to take off some heavy limbs, cutting them close to the trunk. Please advise what materials should be used to protect the cut surfaces.—**S. B. E.**

A. There are a number of coverings one can use, but in general the accepted method is as follows: The entire cut edge of the bark should be covered immediately with a good grade of shellac varnish, also the adjoining outer sapwood and the cambium. In some localities a mixture of 4 parts asphaltum and 1 part of parraffin applied warm are used in place of the shellac. Following the shellac treatment the wound or cut surface should be covered with ordinary creosote oil, applied with a brush. The entire shellaced and creosoted surface may then be painted with thick asphalt, applied warm. Sometimes only one dressing is used, this being a mixture of equal parts by weight of melted asphalt and creosote oil. It should be remembered that creosote is inflammable and care be used to keep it away from an open flame. The asphalt-creosote mixture may cause injury to stone fruit trees.

Book Review . . . .

By LESTER ROUNTREE

"Three Acres and a Mill" was written just after the Munich crisis, when the author, feeling that his life was about to change from that of a novelist and poet addicted to gardening, to that of a soldier, set down in retrospect the twelve years of European collecting trips which brought to his English garden the flowers now growing there.

Robert Gathorne-Hardy ("Three Acres and A Mill," Macmillan, $4.00) is an amateur botanist as well as a poet and novelist and his book is a sort of pot-pourri,—1-6 philosophy, 1-3 botany and 1-2 gardening, with dashes of incident, sentiment and humor, history and poetry—all strung together in a fairly good style, with some excellent photographs of flower habitats and and flowers in habitat, and detailed end-paper maps to elucidate the text.

I am not sure that Mr. Gathorne-Hardy's formula for his book makes for the best reading. Botanists will probably skip the personal sketches, and non-botanists will shun any sections in which italicized Latin names appear and will enjoy only the travel descriptions, reminiscences and personal chatter with which these sections are surrounded. To the gardener, the chief enjoyment of the book will consist in pouncing on the names of many of his own garden flowers, reading about their native growing conditions and thinking "So that's how they live at home and that's what they want me to give them."

"Around the Year in the Garden" (F. F. Rockwell, Macmillan, $3.00) is a practical gardening book for the beginner; and though it is written, as most gardening books are, in reference to a very small section of the United States, it is—with the application of some date changing and common sense—of great value to gardeners in Southern California.

As editor of a Garden Page in an Eastern newspaper, Mr. Rockwell is able to gauge the public demand for information, and since so much written material on present-day gardening goes through his hands, he knows what to salt down in permanent book form.

The content of the book is exactly what its name implies. The year's garden work is portioned out, week by week, from the first of January to the last week of December and to each week is allotted a chapter. Each chapter tells the gardener, in clear practical language which even the complete novice can grasp, how to spend those six (or seven) days to the greatest advantage of his flower and vegetable garden.

There is nothing new, startling or iconoclastic in "Around the Year in the Garden" but it tells the old story well. The continual appearance of these "How to Do It" books and their success demonstrates the number of new gardeners that are being added to our big brotherhood and the growing general interest in gardening.

Rose Diseases

(Continued From Page 2.)

burned. After pruning, a spray of lime-sulphur, 1 part liquid lime-sulphur to 10 parts of water by volume should be applied, taking care that all of the bare stalks are covered thoroughly. The same spray should be repeated in about ten days if rain has fallen in the interval. Normally the dormant buds swell but rarely break into leaf in so short a period of time. This spray will not seriously effect the swelling buds but will burn tender foliage. A wettable sulphur spray, 4 lbs. of wettable sulphur to 100 gallons of water or a sulphur dust, should be applied weekly thereafter until the flower buds are

well formed and commencing to show color, which is usually at least 6 to 8 weeks after pruning. Thereafter, if the wettable sulphur spray has been used a spray composed of potassium sulfide 1 oz. to 3 gallons water may be substituted since the wettable sulphur spray disfigures the blooms badly, however, the potassium sulfide spray may bleach the petals. Either the sulphur dust, a wettable sulphur or potassium sulfide spray should be continued throughout the season at regular intervals. It takes only a few moments to dust the average size rose garden efficiently if it is done correctly with good dusting equipment.

Black Spot (Diplocarpon rosae wolf.)

Black spot is less common on roses in San Diego than either orange rust or powdery mildrew. However, under some conditions it is very serious, causing almost complete defoliation of the plants. Black spots appear on the leaves. These spots commonly have a yellow zone or halo about them depending on the variety. The entire leaf may then turn yellow. Pernetiana varieties are particularly susceptible. It is of most common occurrence where the plants are subjected to poor air drainage, which results in the foliage remaining wet for long periods following rains or sprinkling.

Control: Same as for orange rust.

Leaf Spots (Cercospora spp.)

Of limited occurrence, being confined largely to species roses, but may cause serious damage to foliage and defoliation. Spots sharply defined, more or less circular with gray centers and darker borders.

Control: Same as for orange rust.

Anthracnose (Spaceloma rosarum (Pass.) Jenkins)

Though widely distributed, anthracnose is not well known. Probably often confused with other leaf spot diseases including black spot. Affects all aerial parts of the plants. Leaf symptoms may occur on midrib, veins or leaf margins. Spots scattered or grouped. Those formed near each other may coalesce, circular and variable in size reaching about one-fourth of an inch in diameter. They appear on upper side of leaves first, chiefly brown to dark purplish black. As the lesions mature the central part of the spot on the upper surface becomes ashen or white. Owing to the falling away of the lesions, leaflets may show perforations of different sizes. Red, yellow or brown areas may spread fanlike from the spots or entire leaflets may become involved and later fall away. See article, "Rose Anthracnose" by Anna E. Jenkins, U.S.D.A. and L. M. Massey, Cornell University, page 136, American Rose Annual, 1938, from which these descriptions were taken, for more complete information.

Control: Not thoroughly worked out, control as for black spot or orange rust probably effective.

Chlorosis (Mosaic virus)

This disease first described by Professor Richard P. White of the New Jersey Agricultural Experiment Station has been noted affecting greenhouse roses in San Diego. Leaflets show chlorotic areas especially along the midrib. Slight necrotic areas may occur in the chlorotic regions. Leaves show slight to severe distortion. An excellent illustration is shown facing page 88 of the American Rose Annual of 1930. Manetti root stock is particularly susceptible. The disease is not believed to be serious on outdoor grown roses.

Control: Control is largely a case of avoiding diseased scions and root stock in budding and grafting.

Chlorosis (Lime Induced. Physiological or deficiency disease)

Very prevalent in certain areas in San Diego County. A slight chlorosis of the leaves of plants in active growth often merely indicates an unbalanced soil nutrient solution due most often to excessive nitrogen. When this chlorotic condition becomes chronic and progressively more severe it is often indicative of lime induced chlorosis. The terminal growths of such affected plants may be entirely devoid of chlorophyll (green coloring matter). These albino or cream colored tips may show a slight browning or necrosis. There is no noticeable leaf distortion. New leaves may develop progressively smaller until new growth practically ceases. Occasionally new growth may develop with a pale pinkish color instead of the normal dark brownish red color. This condition is generally associated with excessive marl in the subsoil. Applications of iron sulphate, aluminum sulphate, soil sulphur, etc. give little or at best only temporary relief. Where it is not practical to replace the marl subsoil with good soil to a depth of about 30 inches, or where subdrainage from adjacent marl subsoil cannot be avoided, raising the level of the rose beds a foot or more above the level of the ground will often correct this condition if good top soil is used. Obviously good drainage is essential to success.

(Continued next month)

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San Diego Library

The San Diego Public Library has just received the ninth annual issue of "Gardens & Gardening: 1940" published by Studio Ltd. and edited by C. G. Holme. In his introduction Mr. Holme states, "It has been already suggested to me that under existing circumstances, the production of an annual which has as its main purpose stimulation of interest in garden design should be suspended until the return of normal times. But, flowers will have a very big job to perform in the coming days, in comforting those who are in trouble of mind, body or spirit — a beautiful garden — will bring a message of cheer."

In the book there are illustrations and descriptions of new, rare and curious plants and many articles by specialists. One section is devoted to "Gardening in War Time" and suggests ways and means of both growing food and preserving the pleasure of the gardens intact.

In the many lovely photographs of English Cottage gardens the vision of tranquil beauty will rest the eye and mind of those wearied by the strain of war-time and bring back in reverie the times of peace. —Margaret Follick.

November Meeting

(Continued From Page 6.)

trees that came to San Diego.

In Costa Rica they saw coffee shrubs growing at an elevation of 4000 feet on the mountain side. The country is undeveloped and backward and the standard of living correspondingly low which could be changed. We could use some of their tropical fruits, their mahogany, cocoa and sisal. They need our road making machinery, other mechanical and electrical goods.

The Senators' favorite picture seemed to be that of a stream of water which gushed out of the side of a mountain to be led in a flume to a distant village. This refers back, of course to the early days and the beginnings of the water system of our own city when this same man in his youthful strength and exuberance explored the hills and valleys of the back country for the water we now have. It may be noted again and here that much of the water and road development so vital to the development of this area was inspired in the first place and concluded through his efforts. Human advancement which tends to culminate in what we may now, with some apologies, call civilization seems always to depend on the forethought and effort of very small groups of individuals, sparked or fired by such a man as this.

In thanking Senator Fletcher, Mrs. Mary Greer, who presided, said that "the pictures as well as the evening had sped by all too quickly." All agreed. W. A. N.

Calochortus

(Continued From Page 3.)

the name because of the shape of the petals, the color, and the furry appearance (as C. maweanus). Some of these are among the highly prized specimens collected by Douglas and are cherished in the collection at Kew.

The Calochorti, coming as they do from such widely varied localities and with subsequent differences of soil conditions, in cultivation present a problem. It is rather hard to fix upon a soil that will be adapted to them all. I have had them growing in common garden soil, with no change to adapt it to their special needs, and planted under an orange tree, where they seemed quite happy. But doubtless they would do better with a little more care and attention to their individual needs. A good sandy loam would probably be best for all around use, with good drainage. They should either be planted where water can be withheld after their blossoming or remove the corms from the ground, dry and store until time for replanting. They should be planted in the fall.

—Ethel Bailey Higgins

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SUB-TROPICAL LANDSCAPES

Here are views of the Far South, but contrasting with the California scene. Sabal palms and Spanish moss are dominant in humid regions such as Florida and along the Gulf Coast.